

## PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

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PCT

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Date of mailing  
(day/month/year) 13 MARCH 2006 (13.03.2006)

Applicant's or agent's file reference  
WIND-TURBINE

FOR FURTHER ACTION

See paragraph 2 below

International application No.

PCT/KR2005/004155

International filing date (day/month/year)

06 DECEMBER 2005 (06.12.2005)

Priority date(day/month/year)

19 JANUARY 2005 (19.01.2005)

International Patent Classification (IPC) or both national classification and IPC

F03D 3/06(2006.01)i

Applicant

RYU, Byung-Sue et al

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

## 2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA/KR



Korean Intellectual Property Office  
920 Dunsan-dong, Seo-gu, Daejeon  
302-701, Republic of Korea

Facsimile No. 82-42-472-7140

Date of completion of this opinion

13 MARCH 2006 (13.03.2006)

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WRITTEN OPINION OF THE  
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PCT/KR2005/004155

Box No. I Basis of this opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐ This opinion has been established on the basis of a translation from the original language into the following language \_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).

2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

- ☐ a sequence listing  
☐ table(s) related to the sequence listing

b. format of material

- ☐ on paper  
☐ in electronic form

c. time of filing/furnishing

- ☐ contained in the international application as filed.  
☐ filed together with the international application in electronic form.  
☐ furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE  
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**Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Claims	1-6	YES
	Claims	None	NO
Inventive step (IS)	Claims	4, 5, 6	YES
	Claims	1, 2, 3	NO
Industrial applicability (IA)	Claims	1-6	YES
	Claims	None	NO

**2. Citations and explanations :**

Reference is made to the following documents:

D1: JP 2003-106249

D2: JP 2004-353637

D3: KR 10-1983-0008035

Document D1 discloses a wind turbine which has a cover (2) for covering the wind turbine (1) with opening and closing plates (7) pivoted in the flank (6) of the cover (2). The plate (7) has a rectangular shape with a curved surface and it is installed to rotate freely between rims of a base ring (4) and a top ring (5) with constant intervals along these rings so that it can open and close the cover (2).

D2 discloses a vertical type wind mill wherein a rotor (4) revolves coaxially with a wing axis (2) of the center of a support frame (3), and a plural number of sail cloth blades (5) with a rectangular shape are installed to rotate freely between top and bottom rotors (4).

D3 discloses a wind turbine with a blade (3) whose rotational motion is restricted by a string (7).

Claim 1 shows a wind turbine which includes a support unit with a cylindrical protruding part, a rotary cylinder surrounding the protruding part, a rotating shaft vertically extending from a center of the rotary cylinder, upper and lower bearings, a plurality of vanes installed along the outer circumference of the rotary cylinder with angle limiting means.

The prior arts listed above do not show all the technical features of claim 1. Thus, the subject matter of claim 1 is considered novel under PCT Article 33(2). As a consequence, the subject matter of the dependent claims 2 to 6 is also novel.

(Continued on Supplemental Sheet.)

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.  
Continuation of:

Box V.

However, it would be obvious to a person skilled in the art to replace the sail clothe blades (5) having the rectangular shape of D2 with the rectangular shape plate (7) having a curved surface of D1 and add the string (7) of D3 as an angle limiting means, thereby arriving at the subject matter of claims 1 to 3.

Therefore, claims 1 to 3 lack an inventive step under PCT Article 33(3).

None of the prior art documents mentioned above shows or suggests the technical features as claimed in claims 4 to 6. Thus, the subject matter of claims 4 to 6 is inventive under PCT Article 33(3).